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The Stethoscope

NEWS of the COLUMBIA-PRESBYTERIAN MEDICAL CENTER

VOLUME XIV, NUMBER 9 OCTOBER, 1959

Communications Play Vital Part at M-C

No matter how hot or cold—rain or snow—the telephone switchboard room is a beehive of activity. This small room on the ninth floor handles the equivalent of a small city's daily telephone traffic.

The switchboard operators, the heart of the vast communications system of the Medical Center, handle an average of 18,000 calls a day—not including those calls handled by direct dial service. When you dial "O", a pleasant voice answers "May I help you?" And no matter what the nature of your call, nor the difficulty of your request, the operator will either answer your question or route you to the proper place for the answer without fuss or bother. They will locate doctors any hour of day or night—at home, in their office, or elsewhere. They take and deliver messages of many kinds; handle emergency calls; inquiries as to a patient's condition; administrative business calls; "crank" calls; patient calls; telegrams, using a direct wire to Western Union; all pleasantly, calmly and quickly.

In addition to the telephones, there is the doctors' page service which is handled by special operators. With the vocal call service used in most buildings, there is the silent page system which is used in Neurological, Babies and Eye. Since there are often as many as 600 to 700 doctors in the various buildings at one time, this is quite a complex job in itself.

Responsibility for the smooth

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A FEW DAILY STATISTICS

1,800 dial extension phones in use
100 incoming trunks
14 long distance trunks
16 local trunks
18,000 in and out calls
7,000 direct dial calls
3,500 doctors' page calls
400 doctors' answering service calls
600 patient calls

The New World of the Electron Microscope

How To Cut A Cell Into 500 Parts and See Each Part

Ventures into the mysterious world of viruses—an exploration that is attracting researchers in every part of the world because of the possible link between these organisms and a broad spectrum of diseases ranging from the common cold to cancer—are being made in various departments of the Columbia-Presbyterian Medical Center.

Through use of the electron microscope the Department of Microbiology has exposed one special area of this world. Drs. Harry M. Rose, Councilman Morgan, Gabriel C. Godman, Richard A. Rifkind, and Calderon Howe are employing the instrument to show the stages of viral development in cells and to reveal the complex internal structure of viruses. Techniques developed since 1954 have enabled researchers to peer into the hitherto locked interior of the virus and view its core, other inner units and outer wrappings. Prior to the creation of a technique for cutting the virus into sections, the electron microscope showed only the size and shape of whole viruses.

The stages that bring the virus's inner structure from invisibility to permanent record on a photographic print begin with the growth of healthy cells in a tissue culture. A virus like herpes simplex, vaccinia or adenovirus is selected for study and dropped among the healthy, multiplying cells. Viruses cannot reproduce outside a cell. They infect cells which then provide the environment for multiplication.

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Miss Covell Retires

Miss Cecile Covell, retiring Assistant Director of the Neurological Institute and Assistant Professor of Nursing, College of Physicians and Surgeons, Columbia University, was guest of honor at a reception at the Neurological Institute on September 24, 1959. Her many friends, both old and new, came to wish her well in her new life, and to join together in honoring her successful career with the Medical Center.

Dr. H. Houston Merritt presided as Master of Ceremonies, taking over the mike to wish her Godspeed, and to review the highlights of her years at Presbyterian.

Tiny and trim, and looking more like a guest at a tea dance than a retiring professor, Miss Covell was taken off guard by some of Dr. Merritt's remarks. She was born and brought up in historic New Bedford, Massachusetts, in a family rich in the traditions of the great whaling captains, and knows well the stories of the dangerous and exciting search for sperm oil.

Miss Covell graduated from Wheaton College, Norton, Mass., in 1915 and from Presbyterian School of Nursing with the class of 1926 of which she was president. (She was also president of the student government.) She joined the Presbyterian staff as supervisor at the old hospital down town. After the move uptown in 1928 she was assigned to The Neurological Institute to help the staff there learn about the procedures of Presbyterian Hospital including methods of handling charts, the metric system, and the bookkeeping system. This started as a three month assignment but has lasted thirty years, with time out to attend Teachers College of Columbia University from which she received her M.A. in 1936. In 1957 she was named to her present position as Assistant Director of the Neurological Institute and Assistant Professor of Nursing, College of Physicians and Surgeons, Columbia University.

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The Stethoscope

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PHOTO CREDITS: Communications Story — Sam Ross
Electron Microscope — Mrs. Elizabeth Wilcox
Dr. Merritt, Miss Covell — Frank Ericson

STETHOSCOPIA

Since the last issue went to press, several marriages and engagements have been announced.

MARIE KIMMICK, former staff and now private duty nurse, was married September 19 to GLEN VOGT, an accountant and graduate of New York University School of Accounting.... The marriage took place in Tenafly, N. J. EDITH WALSH, Record Room, was married to FRANK KULEBA on September 19. . . . OFFICER JOSEPH MC GOVERN, Protective Department, and COLETTE BANNIGON, R.N. and former Presbyterian Hospital staff nurse of the Eye Institute, will marry on October 10 at The Church of the Incarnation at 175th Street and St. Nicholas Avenue. They will honeymoon for several weeks in Florida. . . . An October wedding is planned by JOY F. MYERS, a graduate of the Boston School of Fine and Applied Arts, and DR. JOSEPH A. SILVERMAN, an assistant resident in pediatrics at Babies Hospital who received his medical degree from the College of Physicians and Surgeons. . . . On September 21 announcement was made of the engagement of DOROTHY J. BECKWITH, Barnard '59, and ROBERT TAUBER, a student at Columbia University School of Dental and Oral Surgery. . . . The couple will marry in December.

From Accounting comes news of several recent births. Congratulations are being received by MRS. JULIA ARNDT, Collection Department, who is the proud grandmother of a baby boy. . . . Another beaming grandmother is MRS. MARY DONNELLY of the Treasurer's Department who has recently acquired a granddaughter. . . . Congratulations also to MR. AND MRS. HERBERT SCHAINHOLZ on the birth of their first child, a son, JAY DAVID in Harkness Pavilion on September 14. . . . Mrs. Schainholz is DR. MARIANNE WOLFF, P. and S. Class of '52, who was an intern in Medicine at Presbyterian 1952-3, a resident in Surgical Pathology 1956-57, and is an instructor in Surgery at P. and S.

An employee who has left us during the past month is WALTER C. KING of Housekeeping. Mr. King came to Presbyterian on September 18, 1952, and was bidden farewell at a party on September 11, 1959. . . . After retiring, his plans include spending some time with his two daughters who live in Long Island and Washington, D. C. MRS. MINNIE HINTON who retired from Housekeeping two years ago returned for Mr. King's farewell party.

Several departments welcomed new employees this month: Accounting reports the arrival of MARGARET MAILAND, a clerk and LESTER C. BISHOP, Junior Accountant. . . . Build- and Grounds welcomes IRA TIDWELL, while JUDY WEINSTEIN joined Public Interest to replace ROSE MARIE KIRKWOOD. . . . PATRICIA A. HERRICK was transferred from Accounting to the Treasurer's Department, and BARBARA CAHILL from Patient's Accounts to Payroll Unit.

From Mail and Messenger Service comes word that MARGARET GARVEY has journeyed to Ireland to visit her parents. . . . She sailed on August 27. . . . We have received news that PATRICK QUIGLEY, Mail Room, has graduated from the XVIII Airborne Corps Medical Aidman School, and has been promoted to Private First Class. . . . At present Mr. Quigley is on special duty from the 83rd Artillery to the XVIII Airborne Corps Artillery Medical Detachment and is working as a field aidman.

MR. CHARLES SCHNEBEL of the Maintenance and Construction Department and Mrs. Schnebel welcomed their first child, Kimberly Ann, on September 26.

Also retiring is ANNA WHITE who had been employed here as a laundryworker for 16 years at the time of her retirement. She has two sons and 7 grandchildren and plans to continue leading an active life.

CALLING ALL HAMS C.Q.-D.X.
CALLING ALL HAMS
C. Q. — D. X.

There are a great many short wave radio enthusiasts in the Medical Center, and The Stethoscope would like to have their names to start a HAM club. Please send your names to the Public Interest Office—Room 30 of Presbyterian Hospital.

Doings of Doctors . . .

The Columbia University Dental School in the Medical Center held an "open house day" during the recent centennial meeting of the American Dental Association at the Waldorf-Astoria Hotel and the New York Coliseum. Visitors from Finland, Guatemala, Italy, Cuba, France, England, Sweden, Japan, Switzerland, Austria, Germany, Denmark, Scotland, and the Republic of Columbia visited the Dental School, in addition to dentists from many states in this country. Approximately 150 guests attended the open house.

☆ ☆ ☆

Doctor Harrison L. McLaughlin was elected Chairman of the Committee on Trauma of the American College of Surgeons at the January meeting of this committee in Milwaukee. Doctor McLaughlin has been a member of this committee since 1948 and served as Vice-Chairman from 1957 until taking over as Chairman. He is presently Vice-President of the American Association for the Surgery of Trauma, and was elected President at the Association's meeting at Bretton Woods the week of September 21.

☆ ☆ ☆

Dr. Alan DeForest Smith was elected Vice-President of the American Orthopaedic Association at that association's meeting at Bretton Woods in June of this year.

☆ ☆ ☆

Doctor Irville H. MacKinnon, Attending Psychiatrist, Presbyterian Hospital and Vanderbilt Clinic, Professor of Psychiatry in the College of Physicians and Surgeons, and Assistant Director of the New York State Psychiatric Institute has resigned his positions after 30 years of service in the Medical Center.

Doctor MacKinnon was Acting Director of the Service from September, 1953 to June, 1954.

He has accepted the post of Superintendent of the Milledgeville State Hospital, Georgia, where he will direct the mental health services of the state. He will also serve as Professor of Psychiatry at Emory University, Atlanta, Georgia.

In Memoriam

JANET BAMFORD CHRISTIE

Janet Banford Christie, died in New York City, on June 30, 1959, in her ninety-sixth year, after a long illness. A funeral service was held in Dana Chapel of the Madison Avenue Presbyterian Church on July second. She was buried in Arlington Cemetery with full military honors, the services being conducted by an Army chaplain.

Upon her graduation in the Class of 1898, Mrs. Christie was appointed head nurse in the accident ward and dispensary of the old Presbyterian Hospital on 70th Street. In January 1904 she was named "assistant superintendent of the Training School." In May 1907 she was made "acting superintendent" during Miss Maxwell's six months' leave of absence for rest and relaxation.

At the beginning of the century she was elected treasurer of the Alumnae Association, an office which she held until she left for overseas in 1917. In May, 1917, Mrs. Christie was appointed chief nurse of the Presbyterian Unit, Base Hospital No. 1, British Expeditionary Force, Etretat, France.

Field Marshal Haig made honorable mention of Mrs. Christie in his London dispatch dated December 28, 1917. She also received the British decoration—Royal Red Cross, First Class—bestowed by King George V. In February 1919 she returned to the Nursing Office where she remained until June 30, 1921. Mrs. Christie will be remembered by her many friends among the alumnae for her outstanding contribution to the early years of the school.

RICHARD G. LYNCH

Richard G. Lynch, an elevator operator for the past eleven years, died in Presbyterian Hospital on October 4, 1959. He is survived by his father and two brothers.

From the Mail Bag . . .

"During the month of July I spent three weeks at the Harkness Pavilion to undergo a major operation. I feel it is but right that I should send you these few lines to tell you how very pleased I was with the wonderful care and excellent service I received in Harkness. Yours is indeed a noble work, and I am most grateful for the help I received."

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"I want to take this opportunity to again sing the praises of each one of your medical staff. Never has anyone been treated with more consideration, gentleness, sympathy, and understanding."

☆ ☆ ☆

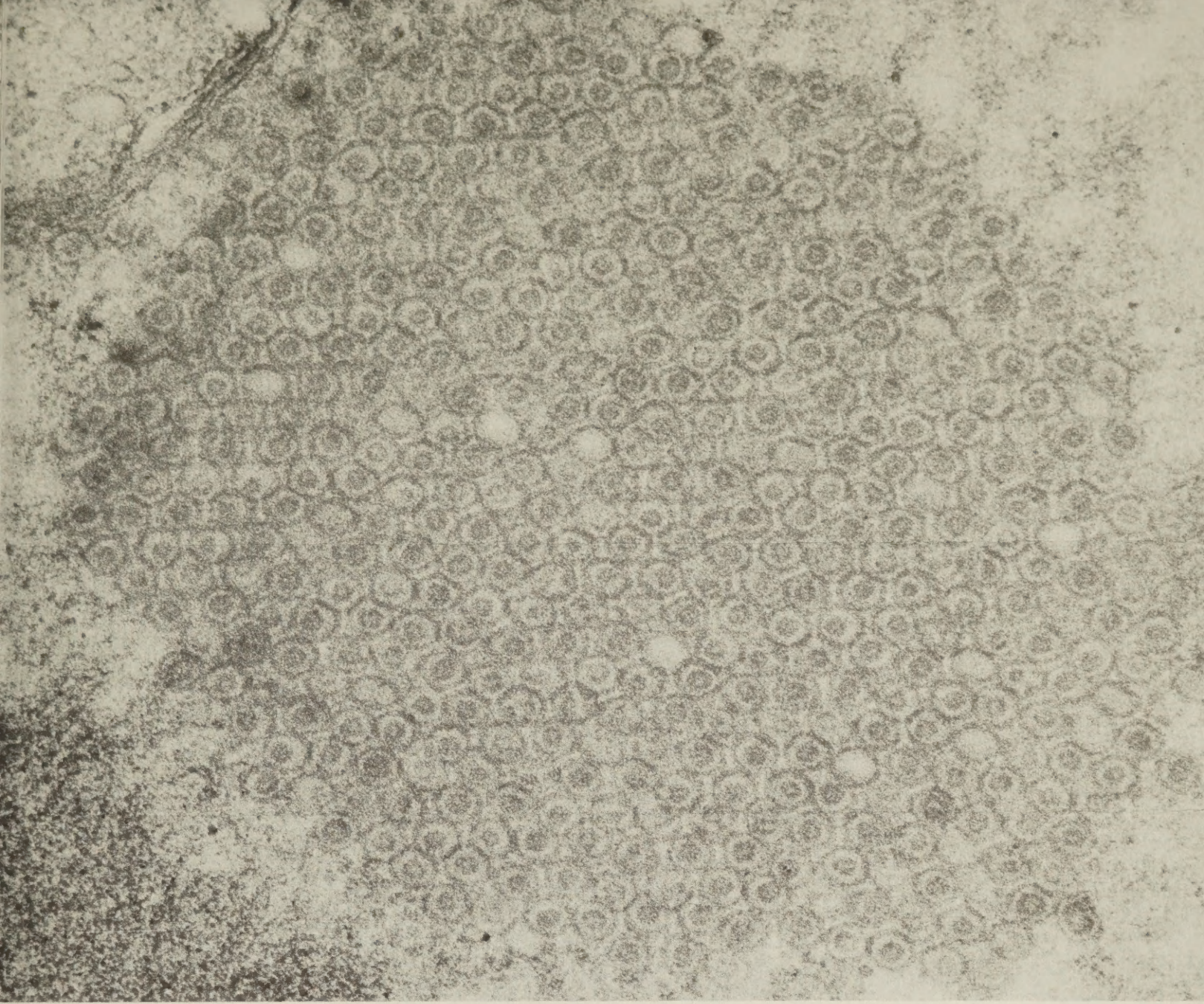
"My short stay at Presbyterian Hospital was very pleasant because of the efficient and courteous care I received. Everything was handled very satisfactorily."

☆ ☆ ☆

"If one has to be sick, this is a good place to do it in. I am very grateful to the nurses on 9 East in Presbyterian. I saw the face of mercy on that kind nurse who watched over me all afternoon and night in the recovery room. I have met with cheerful help and service through all my stay—I humbly thank everyone."

☆ ☆ ☆

"My husband and I are extremely grateful for the wonderful care I received in Harkness Pavilion. We are newcomers to New York, and I had looked upon any sickness and/or hospitalization in this big city with quite a bit of apprehension. Thank you for making my hospital stay as pleasant as possible under very difficult circumstances."



The New World of the Electron Microscope

Continued from page one

After infection the cells are fixed in osmium tetroxide, which stabilizes the structure of the cell, and dehydrated in ethyl alcohol.

The prepared, virus-ridden tissue, a black spot containing some 100,000 cells but no bigger than the sharpened tip of a lead pencil, then is imbedded in a liquid plastic called methacrylate. The plastic is hardened in an oven or under ultraviolet radiation and it emerges as a solid, transparent, pea-sized object bearing the tiny spot of infected cells within it.

A technician, who must be trained, now faces a tricky part of the procedure. Sections must be cut 100 times thinner than those used for light microscopy.

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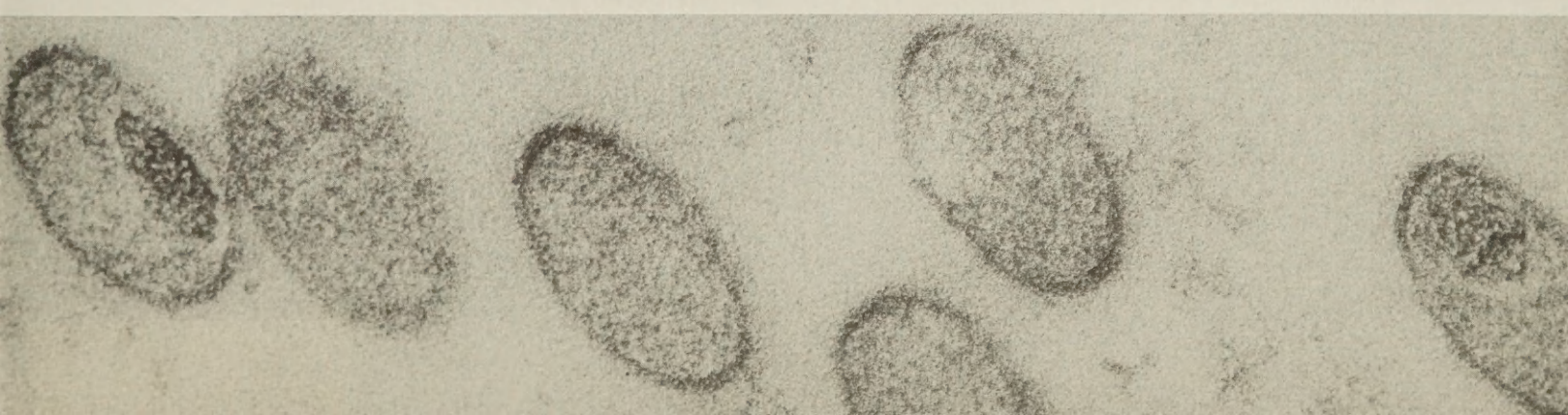
Herpes Simplex Virus magnified 100,000 times.

These viral particles have crystallized inside the cell. In the enlargement, only a section of the crystal can be seen. Each viral particle consists of a dense spherical core and a sharply-defined peripheral membrane.

Vaccinia Virus magnified 180,000 times.

A section showing the virus in the cytoplasm of the cell. Each dark oval is a viral particle. At this stage of development, the virus consists of a dense eccentrically placed internal body (seen in virus at extreme ends), a finely granular matrix and a dense peripheral membrane. Since the section is thinner than the virus, the internal body can be seen only in those virus sliced at the appropriate level.



The New World of the Electron Microscope

Continued from page three

Using a special microtome equipped with knives made of a sliver of diamond or the sharp edge of a broken piece of plate glass, the technician advances the tiny plastic ball by minute degrees through the instrument and shaves off fragments of tissue. A good usable slice of tissue runs no thicker than 1/625,000 of an inch. At this thickness a single cell can be divided into 500 sections. They are invisible in transmitted light. To place them on a grid for study under the electron miscroscope, however, they must be seen. This is accomplished by floating the specimens on water, viewing them in reflected light and drifting them onto a tiny metal grid.

A section so thin and small has both an advantage and a disadvantage: while it eliminates confusing superimposition of structure, very little of the cell can be examined in any given slice.

A member of the research team then places the tissue-bearing grid in the electron microscope. This instrument is essentially a long evacuated tube containing three magnetic lenses and a series of small apertures. At the top end a tungsten filament fires electrons down the tube. Accelerated by a strongly-charged positive field of 50,000 volts and controlled in direction by the magnetic fields of the lenses, the electrons strike the specimen on the grid. The dense structure of the specimen deflects the electrons. Low density areas permit the passage of the electrons. Near the bottom of the tube a fluorescent plate translates the electrons' energy into light, which enables the viewer to see the image of part of the specimen on the grid. A micrograph, or picture, can be obtained by flipping the fluorescent plate aside and exposing a photographic plate.

The power of the electron microscope almost defies imagination. A high-powered light microscope magnifies 3,500 times. The Medical Center's electron microscope magnifies 20,000 times directly on a negative, which can be enlarged optically to the order of 300,000 times. In effect, the instrument can enlarge a ball one inch in diameter to a ball nearly five miles in diameter. The tremendous magnification is made possible by the electron's wave lengths, which are thousands of times shorter than light wave lengths.

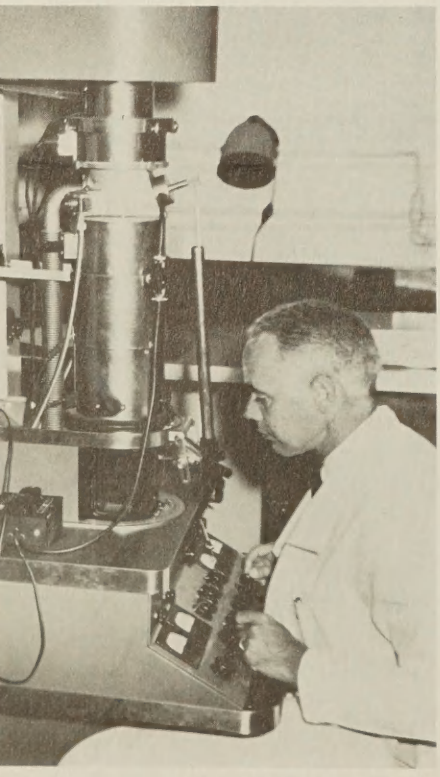
Magnifying power, however, is important only secondarily. The scientist primarily requires a picture with good resolution. If the cells and viruses do not appear with definition and clarity the enlargement is useless.

A refinement of the electron microscope's usefulness has been employed by Dr. Gabriel C. Godman of the Medical Center. This technique permits light microscopy to be correlated with electron microscopy. Adjoining sections of viruses within host cells are cut, one section thin for the electron microscope, the other thick for the light microscope. With the thick section, stains can be applied for various substances and the results viewed under the light microscope. Once the substances and chemicals are identified by means of the stains, the electron microscopist takes over and reveals structural details not visible in the light microscope.

Through the eye of this extraordinary instrument the Medical Center's microbiologists have exposed a view of the viruses' curious world and witnessed the changing composition and behavior of the virus as it develops in its host cells. The influenza virus, for example, clings to the surface of the host cell and cannot be seen in the interior. It appears both as a sphere and a filament. Adenovirus and herpes simplex cluster within the nucleus of the cell. Vaccinia congregates in the cell's cytoplasm and changes appearance as it moves into the extracellular fluid. Some viruses have single outer coats. Herpes simplex virus, however, bears two coats. Adenoviruses often assemble within the cell in the form of a symmetrical crystal.

Why viruses vary in size, shape, internal structure and modes of development cannot be answered at present.

For decades researchers speculated about the mysterious world of life's smallest living creatures. They now are seeing parts of this world. The fact that scientists have a basis in observed reality for asking how viruses develop and injure cells represents a considerable achievement.



Dr. Councilman Morgan twists dials of the electron microscope to control focus and to adjust position of the specimen.

Above are a few of the "Candy Stripers" we were able to round up for a group picture before they departed in the "back to school" movement. The 50 girls have given unsparingly of their time and have run up the fabulous total of 1,923 hours for the month of July (one of the hottest months) alone.

All-together the Volunteers for the same month contributed 10,244 hours, with break down of figures as follows:

Candy Stripers	**1,923 hours**
Junior Volunteers	**3,429 hours**
Junior Red Cross Volunteers	**309 hours**
High School Graduates and College Students	**1,496 hours**
TOTAL	**7,157 hours**

The over-all contribution for 1958 was 969 men and women with a total of 102,251 hours contributed. Many of these volunteers donated not only their day hours, but nights as well.

Miss Covell

Continued from page one

She is an active member of the American Nursing Association, the National League for Nursing and the National Association of Practical Nursing.

Her present plans are to continue as Convention Manager for the National Association of Practical Nursing. Her first convention will be held at Salt Lake City next spring. The 1962 convention is scheduled for Washington, D. C. and the following one for Miami, Fla. She also plans to be available for consultation in the field of rehabilitation nursing.

Miss Covell is also opening her country home "Catamaran" at Quaker Hill, N. Y., and plans to entertain her many friends there during the coming months.

Miss Covell relinquishes her position to Martha E. Haber about whom we will tell you next month.

Lost and Found

The following articles have been turned in to the Protective Department. Please see Protective if you have any information regarding the ownership of these items.

Class ring with initials J. A. T.

Class pin with initials A. T.

Class pin with name J. Hartley

Class pin with name Elizabeth M. Burgoyne

Class pin with name Blanche Landrey

Class pin with St. Elizabeth Hospital

Cuff links with initials A. R.

Scissors with initials M. S.

Scissors with name Julia Clarke

Identification of Patients

As of October 1st all patients will be identified with plastic wrist bands with their name sealed in plastic bracelets.

The bands will be attached to the patient immediately after admission as an added safeguard. At the same time newborn babies will, in addition to their plastic bands showing their names, also be foot printed in the delivery room in conformance with the new regulations of the New York City Department of Health. The right thumb print of the mother will be affixed at the same time.

Communications Play Vital Part at M-C

Continued from page one

efficiency of the telephone room—Mrs. Ann Traino, Chief Operator, along with Mrs. Theresa Repan, Assistant Chief Operator. Three supervisors are also necessary to run this big task. They are Mrs. Elizabeth Trevor, Mrs. Helen Wisman and Mrs." Matilda Massey. Forty-one operators complete the staff.

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